simplified ventral feather-tracts, would also possess a syrinx arranged on the tracheo-bronchial plan. This, again, is exactly the form of syrinx which that genus of Cuckoos does possess, and the following is a more detailed description of it. The syrinx of *Hierococcyx varius* is displayed in the annexed illustrations (figs. 16, 17, p. 602).

The last tracheal ring and the first three bronchial semi-rings are very plainly to be distinguished from the preceding tracheal rings and the succeeding bronchial semi-rings. They are obvious and different from them on account of their red colour. As will be gathered from this colour, the rings and semi-rings in question are ossified. But so also, though differing in colour, are the tracheal rings which precede. On the other hand, the bronchial semi-rings which follow after the first three are soft and cartilaginous. The pessulus of this syrinx is quite well developed. It marks by its origin on both sides of the windpipe the last tracheal ring. The three strong semi-rings which follow are thus plainly bronchial in spite of their resemblance to split tracheal rings, and their great difference from the soft cartilaginous bronchial rings which immediately ensue. Or, to be probably more accurate, they are really rings belonging to the tracheal section of the windpipe which have taken on the characters of bronchial semi-rings. This matter, however, will be referred to again in considering other forms of syrinx in this family of birds. *Hierococcyx* possesses the usual pair of intrinsic syringeal muscles, which are thin and not easy to see. These muscles fan out at their insertion, which is on the third bronchial semi-ring, of the three that are ossified, of course.

I shall now proceed to compare the windpipe of *Hierococcyx* with that of the closely related genus *Cuculus*. I gave in my earliest paper upon Cuckoo anatomy a brief account of the syrinx of *Cuculus canorus*. I may supplement this by a more detailed account of the syrinx of the Eastern *Cuculus micropterus*, a specimen of which, presented to the Zoological Society by Mr. E. W. Harper, of Calcutta, died in the Society's Gardens last year. The syrinx of this bird presents an interesting and significant departure in structure from

the syrinx of *Hierococcyx* just described. In *Cuculus micropterus* the rings which actually form the syrinx—*i. e.*, the last tracheal and the few first bronchial semi-rings—are of the same red colour as are those of *Hierococcyx*, and they are also ossified as in that species. But the difference is, that instead of only three rings which must be relegated to the bronchial series there are four of these semi-rings. The pessulus has, so to speak, moved a ring higher up; the trachea has been a little more split than in *Hierococcyx*. The thin intrinsic muscles are, as before, attached to the last of the specialized bronchial semi-rings; but in the present species that ring is naturally the fourth instead of the third. The pessulus is plainly seen, when the syrinx is viewed from behind, to bend upwards and to interfere between the otherwise closely approximated ends of the last tracheal ring. The split extremities of this ring do not meet except through the intervention of the end of the pessulus. There is no fusion between it and them. This state of affairs agrees exactly with my earlier description * of the syrinx of *Cuculus canorus*, to which I have already referred.

Clearly related to the two genera which have just been mentioned is the much smaller Cuckoo referred to the genus *Cacomantis*, also of Old World range. In a specimen of this genus (I am quite uncertain as to the species) I have examined the syrinx, and find it to be exactly like that of *Cuculus*, and so far different from the syrinx of *Hierococcyx*. In *Cacomantis*, in fact, there are, as in *Cuculus*, four tracheiform bronchial semi-rings which are ossified throughout. To the last of these are attached the slender intrinsic syringeal muscles. I have already referred *Cacomantis* to the Cuculine section of the family on account of the muscle-formula of the thigh and the characters of the ventral pterylosis. This finishes what I have now to say respecting the anatomy of forms closely related to *Cuculus*.

Before proceeding to add some new facts to our knowledge of the rather more remotely allied genus, *Coccystes*, I should like to point out certain features in which the group of

* P. Z. S. 1885, p. 170.

Cuckoos, containing the genera *Eudynamis, Scythrops,* and *Phœnicophaës,* resembles the Cuculine series. I have already indicated * the general likeness that exists between the syringes in these three genera and that in the genus *Cuculus.* There is, in fact, a very close resemblance; but the full Garrodian muscle-formula and the complicated pterylosis led me to place the group containing these genera midway between the Cuculine and the Centropine series. I have no reasons for doubting the correctness of that placing; and I may observe that Fürbringer † seems inclined to allow this arrangement, and to admit with me that *Eudynamis* and its allies are perhaps to be looked upon as ancestral forms from which the Cuculine series on the one hand and the Centropine on the other are to be derived. We should, therefore, expect to find in this group—or at least we should not be surprised to find there—a syrinx of a rather more primitive style of structure than in the hypothetically modified Cuculinæ. As a matter of fact, what we do find in the *Eudynamis* group are syringes shewing precisely the same characters as in the Cuculine group. This, however, is no bar to the derivation of the one series from the other. In my paper upon the anatomy of *Scythrops* ‡ I made, as I find on re-examination of the syrinx of that bird, a slight error. I stated erroneously concerning *Scythrops* that the intrinsic muscles of the syrinx were attached to the second bronchial semi-ring. But I now find that they were attached to the third of those rings.

Among the allies of *Eudynamis* we therefore find syringes constituted upon two plans that are to be found in the Cuculine series. But since the Phœnicophainæ have some claims to be regarded as ancestral to the Centropinæ, we should expect to find some hints of a Centropine arrangement of the rings and muscles of the lower part of the windpipe. It is one of the objects of the present communication to shew that there is a hint of a development into

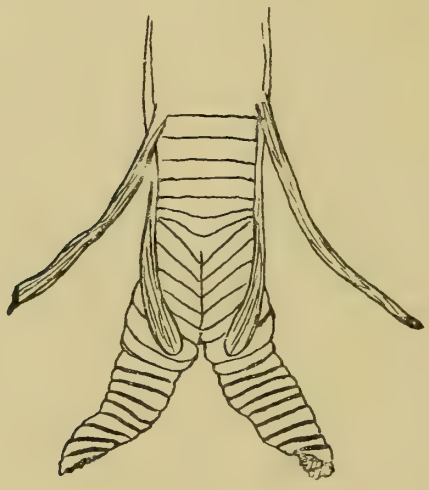
* P. Z. S. 1885, p. 172.

† Unters. z. Morph. u. Syst. d. Vögel (Amsterdam, 1888).

‡ P. Z. S. 1898, p. 44.

the bronchial syrinx of the Centropine Cuckoos in the genus *Rhamphococcyx*. This genus has not, so far as I am aware, been examined anatomically. Through the great kindness of Dr. Charles Hose, of Borneo, I have come into possession of two individuals belonging to as many species of this genus. The two species are *R. erythrognathus* and *R. microrhynchus*. The latter example is a hen, the former a cock. This genus, as might have been expected, has the complete Garrodian leg-muscle formula, as have the other Phœnicophainæ. The pterylosis is constructed upon the same plan, and in details is similar to that of its other allies. The ventral tract divides into two halves at the

Fig. 18.



End of trachea and bronchi of *Rhamphococcyx erythrognathus*; ventral aspect.

beginning of the neck, and leaves at first but a narrow space between the two. Each half, again, in the Centropine and Phœnicophaine manner, divides into two tracts. The exact point at which this division takes place is not easy to mark; the process of divergence of the outer row of feathers from the inner being so gradual. But, in any case, it is after a single row of strong feathers has been given off to the wing. After the separation of the two divisions of the ventral tract of each side, the stronger inner rows are con-

tinued in a straight line to the neighbourhood of the cloacal orifice: the row is at first composed of two feathers abreast; afterwards of but one. The outer part of the ventral tract, which ceases to exist a considerable way before the inner division, in fact at about the middle of the area of the insertion of the thigh, is only a single row wide; and the feathers composing this single row get further apart as the end of the short row is neared. As to the spinal tract, there appears to be no break between the more strongly feathered anterior region upon the neck and the less strongly feathered dorsal part of the tract. The anterior part undoubtedly bifurcates between the shoulders. This does not always appear to be the case with this portion of the dorsal tract among Cuckoos.

The syrinx (fig. 18, p. 606) is particularly interesting from the point of view of the Phœnicophainæ. The intrinsic syringeal muscles are attached to the sixth semi-ring in *R. erythrognathus*, and apparently to the fifth in the other species that I have examined, viz. *R. microrhynchus*. This state of affairs obviously approaches that characteristic of the Centropine syringes, where a large number of rings ensue between the bifurcation of the windpipe and the insertion of the syringeal muscles. I imagine that in all of these cases there has occurred, not so much a moving down of the point of insertion of the muscles in question, as a splitting of the tracheal part of the windpipe, whereby rings or semi-rings are apparently added to the bronchi. The tracheiform character of the first set of rings or semi-rings in the bronchi of the Centropine birds is plain; and it is equally plain in this genus *Rhamphococcyx*.

In *Coccystes* (represented for me by the species *C. jacobinus*) the syrinx is quite Cuculine in form; but, as might be supposed from the unquestionable distinctness of the genus, there are some few differences in detail from that of *Cuculus*. As in *Cuculus*, the intrinsic muscles are attached to the fourth semi-ring; but the rings are very much more slender than in *Cuculus* (and *Hierococcyx*), with wider interspaces of membrane, instead of abutting closely upon each other.

As to the other two structural features upon which I have relied in classifying this group, *Coccystes* entirely resembles *Cuculus*.

I think that these statements add to the probability of there being some basis of truth in my attempted arrangement of the Cuculidæ.

XXXVIII.—*Remarks on Two lately-described Australian Birds.* By P. L. Sclater.

(Plates XIV. & XV.)

Amongst the new or little-known Australian birds which I exhibited at the meeting of the British Ornithologists' Club on the 19th of February last (see Bull. B. O. C. vol. xii. p. 50) were two of especial interest, one of them being of a genus new to Australia, if not to science, and the other a very fine new Parrakeet of the Platycercine group. Our excellent correspondent, Mr. A. J. North, C.M.Z.S., was very anxious that these novelties should be figured in 'The Ibis,' and we have great pleasure in being able to accede to his wishes. I take the opportunity of offering a few remarks on these two rare birds.

1. Eremiornis carteri. (Plate XIV.)

Eremiornis carteri North, Vict. Nat. xvii. p. 78 (Aug. 1900); id. op. cit. p. 93; Sclater, Bull. B. O. U. xii. p. 51.

This new and very interesting bird was discovered by Mr. Tom Carter, of Point Cloates, Onslow, West Australia, at North-west Cape, near Exmouth Gulf. Mr. Carter shot two of these birds, which he met with "on barren rocky ranges in the dense *Spinifex* tufts," and forwarded one of them to Mr. North, who gave a full description of it as above quoted. While we agree with Mr. North that this bird is quite distinct from every other known Australian form, we are not so sure that it was necessary to make a new generic name for it. It is certainly very closely allied to the genus *Schœnicola* of Blyth, of which two species are recognised—*S. platyura* of India and *S. apicalis* of Africa

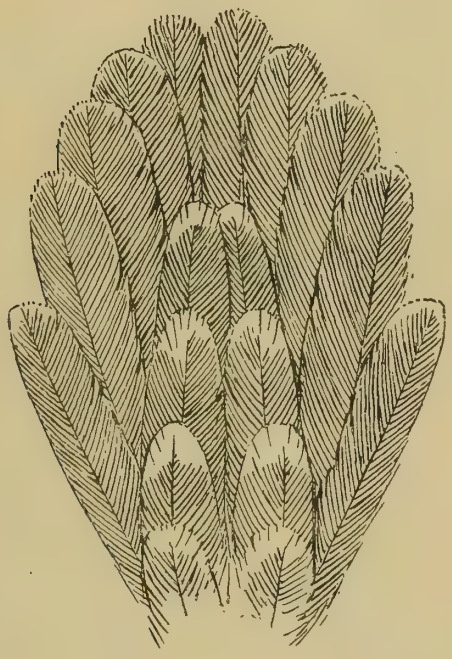
J.G. Keulemans del. et lith. Mintern Bros. imp.

EREMIORNIS CARTERI.

(*cf.* Sharpe, Cat. B. vii. p. 109, 1883). At the same time it must be allowed that in *Schœnicola* the bill is shorter and stronger, the tarsi longer, and the feet larger, so that there are, perhaps, sufficient grounds for maintaining the genus *Eremiornis* for the Australian representative of this group.

One of the most remarkable features in *Eremiornis* (which, however, it shares with *Schœnicola*) is the enormous length of the under tail-coverts, some of which extend beyond

Fig. 19.



Under surface of the tail of *Eremiornis*, shewing the elongated under tail-coverts.

the extremity of the outer pair of rectrices. They carry a broad pale band at their ends, as shown in the accompanying figure (fig. 19). The rectrices are ten in number, as in most of the other Bradypterine Sylvians*. The upper tail-coverts, as will be seen by the coloured figure, are also much elongated, but this is a common feature in the Bradypterines.

The figure is taken from a specimen obtained by Mr. Carter at Point Cloates on February 20, 1902, and forwarded

* I agree with Dr. Sharpe (Cat. B. vii. p. 93) that the *Bradypteri* are allied to the Reed-Warblers, and should be placed among the Sylvians.

by him to us. It is marked "♂. Irides hazel; bill horn-coloured; legs and feet purplish."

There is a nearly similar specimen in the British Museum, also a male, obtained by Mr. Carter at the same locality in November 1900. The lores are slightly reddish, and the white superciliary stripe rather more distinct.

2. Platycercus macgillivrayi. (Plate XV.)

Platycercus macgillivrayi North, Vict. Nat. xvii. p. 91 (Sept. 1900); id. op. cit. p. 113.

There can be no question about the distinctness of this beautiful addition to the Australian avifauna, but I thought it best to send the specimen to Count Salvadori, our supreme authority on the Psittacidæ, who has favoured me with the following remarks:—

"*Platycercus* (I should say *Barnardius*) *macgillivrayi* is a perfectly good species. Unfortunately I do not possess the 'Victorian Naturalist' containing the original description, but from the specimen inspected it is quite obvious that, although allied to *B. barnardi*, *B. macgillivrayi* has good claims to stand as distinct. The principal characters are as follows:—There is no red frontal band, the forehead is more bluish green, with a slight touch of yellow, the back is lighter green, the upper tail-coverts have a yellowish tinge, the breast is distinctly yellowish green, and the abdomen extensively yellow.

"Besides *B. macgillivrayi*, there is another addition to be made to the species described in the Catalogue—*B. occidentalis* North, Records Austr. Mus. ii. p. 83 (1893), allied to *B. zonarius*."

This fine species was discovered by Mr. Alexander Sykes Macgillivray in the Cloncurry district of Northern Queensland, and was described by Mr. North in the 'Victorian Naturalist,' as above quoted. It is said to be common about Cloncurry, which lies inland south of the Gulf of Carpentaria, and to extend to the shores of the Gulf of Normanton.

The specimen figured, kindly forwarded to me by Mr. North, is believed by him to be a male. It was procured at Cloncurry in 1901.